

**IN THE CLAIMS**

Please amend the claims as follows:

1-56. (Canceled)

57. (Currently Amended) An apparatus for measuring physiological pressure comprising:  
a pressure transmitting catheter having a lumen filled with a pressure transmitting medium;

a transducer in communication with the pressure transmitting medium to provide a pressure signal representing variations in the physiological pressure on an electrical wire;  
signal processing circuitry coupled to the electrical wire to process the pressure signal;  
and

a an implantable housing holding the signal processing circuitry and the transducer;  
wherein the pressure transmitting catheter includes a first layer material surrounding the lumen and at least one additional layer of material surrounding the first layer material, wherein the at least one additional layer of material has at least one material with a different hardness than the first layer of material.

58. (Original) The apparatus of claim 57 wherein the pressure transmitting medium comprises a gel.

59. (Original) The apparatus of claim 57 wherein the pressure transmitting medium comprises a gel and a low-viscosity liquid.

60. (Original) The apparatus of claim 57, wherein the lumen is filled entirely with a pressure transmitting gel.

61. (Original) The apparatus of claim 57 further comprising telemetry circuitry located in the housing and coupled to the signal processing circuitry to provide a telemetry signal representing the pressure signal.

04/20/2004 HAHMED1-00000023-09997850

158200

01 4582202

62. (Original) The apparatus of claim 61 wherein the telemetry circuitry transmits the telemetry signal to an external receiver.

63. (Original) The apparatus of claim 57 wherein the apparatus can be employed to measure arterial pressure, venous pressure, pulmonary pressure, bladder pressure, left ventricle pressure, or intracranial pressure.

64. (Currently Amended) An apparatus for measuring physiological pressure comprising:  
a pressure transmission catheter having a lumen filled entirely with a pressure transmitting gel and implantable in an area having a physiological pressure;  
a transducer in communication with the pressure transmitting gel and coupled to an electrical wire to provide a pressure signal representing variations in the physiologic pressure on the electrical wire;  
signal processing circuitry coupled to the electrical wire to receive the pressure signal and provide a signal representing the pressure signal; and  
a an implantable housing for holding the signal processing circuitry and transducer;  
wherein the pressure transmitting catheter includes a first layer material surrounding the lumen and at least one additional layer of material surrounding the first layer material, wherein the at least one additional layer of material has at least one material with a different hardness than the first layer of material.

65. (Canceled)

66. (Original) The apparatus of claim 64, wherein the pressure transmitting catheter is flexible.

67. (Original) The apparatus of claim 64 further comprising telemetry circuitry located in the housing and coupled to the signal processing circuitry to provide a telemetry signal representing the pressure signal.

68. (Original) The apparatus of claim 67 wherein the telemetry circuitry transmits the telemetry signal to an external receiver.

69. (Currently Amended) An apparatus for measuring physiological pressure comprising:  
a pressure transmission catheter having a lumen filled with a pressure transmitting medium and implantable in an area having a physiological pressure, the pressure transmission catheter having a multi-durometer construction including a first layer material surrounding the lumen and at least one additional layer of material surrounding the first layer material, wherein the at least one additional layer of material has at least one material with a different hardness than the first layer of material;

a transducer in communication with the pressure transmitting medium and coupled to an electrical wire for providing a signal representing variations in the physiologic pressure on the electrical wire; and

a connecting catheter carrying the electrical wire to a location remote from the transducer.

70. (Canceled)

71. (Canceled)

72. (Original) The apparatus of claim 69 wherein the pressure transmission catheter has a length in the range from approximately two millimeters to approximately four centimeters.

73. (Original) The apparatus of claim 69 wherein the pressure transmitting medium comprises a gel.

74. (Original) The apparatus of claim 69 wherein the pressure transmitting medium comprises a gel and a low-viscosity liquid.

75. (Original) The apparatus of claim 69 wherein the pressure transmitting medium comprises a slidable plug and a low-viscosity liquid.

76. (Original) The apparatus of claim 69 wherein the pressure transmitting medium comprises only a gel which fills the entire lumen.

77. (Canceled)

78. (Original) The apparatus of claim 69 further comprising signal processing and telemetry circuitry coupled to the electrical wire to receive the pressure signal and provide a telemetry signal representing the pressure signal.

79. (Original) The apparatus of claim 78, wherein the signal processing and telemetry circuitry transmits the telemetry signal to an external receiver.

80. (Original) The apparatus of claim 78, wherein the signal processing and telemetry circuitry is located within a housing and wherein the housing is remote from the transducer.

81. (Currently Amended) An apparatus for measuring physiological pressure comprising:  
a pressure transmission catheter having a lumen filled entirely with a pressure transmitting gel and implantable in an area having a physiological pressure; ~~and~~  
a transducer in communication with the pressure transmitting gel and coupled to an electrical wire to provide a signal on the electrical wire which represents variations in the physiologic pressure; and

an implantable transducer housing to contain the transducer,

wherein the pressure transmitting catheter includes a first layer material surrounding the lumen and at least one additional layer of material surrounding the first layer material, wherein the at least one additional layer of material has at least one material with a different hardness than the first layer of material.

82. (Canceled)

83. (Original) The apparatus of claim 81, further comprising signal processing and telemetry circuitry coupled to the electrical wire to receive the pressure signal and provide a telemetry signal representing the pressure signal.

84. (Original) The apparatus of claim 83, further comprising a housing holding the signal processing and telemetry circuitry and transducer.

85. (Original) The apparatus of claim 81, wherein the electrical wire is carried within a connecting catheter carrying the electrical wire to a location remote from the transducer.

86. (Canceled)

87. (Original) The apparatus of claim 85, wherein the pressure transmission catheter has a length in the range from approximately two millimeters to approximately four centimeters.

88. (Canceled)

89. (Original) The apparatus of claim 85, further comprising signal processing and telemetry circuitry coupled to the electrical wire to receive the pressure signal and provide a telemetry signal representing the pressure signal.

90. (Original) The apparatus of claim 89, wherein the telemetry circuitry transmits the telemetry signal to an external receiver.

91. (Previously Presented) An apparatus for measuring physiological pressure comprising:  
a pressure transmission catheter having a lumen filled with a pressure transmitting medium and implantable in an area having a physiological pressure, wherein the pressure transmitting medium comprises a slidable plug and a low-viscosity liquid;

a transducer in communication with the pressure transmitting medium and coupled to an electrical wire for providing a signal representing variations in the physiologic pressure on the electrical wire; and

a connecting catheter carrying the electrical wire to a location remote from the transducer.

92. (Previously Presented) The apparatus of claim 91 wherein the pressure transmission catheter has a length in the range from approximately two millimeters to approximately four centimeters.

93. (Previously Presented) The apparatus of claim 91 further comprising signal processing and telemetry circuitry coupled to the electrical wire to receive the pressure signal and provide a telemetry signal representing the pressure signal.

94. (Previously Presented) The apparatus of claim 93, wherein the signal processing and telemetry circuitry transmits the telemetry signal to an external receiver.

95. (Previously Presented) The apparatus of claim 93, wherein the signal processing and telemetry circuitry is located within a housing and wherein the housing is remote from the transducer.

96. (Currently Amended) An apparatus for measuring physiological pressure comprising:  
a pressure transmission catheter having a lumen filled entirely with a pressure transmitting gel and implantable in an area having a physiological pressure;  
a transducer in communication with the pressure transmitting gel and coupled to an electrical wire to provide a signal on the electrical wire which represents variations in the physiologic pressure;  
signal processing and telemetry circuitry coupled to the electrical wire to receive the pressure signal and provide a telemetry signal representing the pressure signal; and

a an implantable housing holding the signal processing and telemetry circuitry and transducer.

97. (Previously Presented) The apparatus of claim 96, wherein the pressure transmission catheter has a length in the range from approximately two millimeters to approximately four centimeters.

98. (Previously Presented) The apparatus of claim 96, wherein the telemetry circuitry transmits the telemetry signal to an external receiver.

Please add the following new claims:

99. (New) The apparatus of claim 72, wherein the pressure transmission catheter has a length of approximately four centimeters.

100. (New) The apparatus of claim 72, wherein the pressure transmission catheter has a length in the range from approximately one centimeter to approximately four centimeters.

101. (New) The apparatus of claim 72, wherein the pressure transmission catheter has a length of approximately one and a half centimeters.

102. (New) The apparatus of claim 87, wherein the pressure transmission catheter has a length of approximately four centimeters.

103. (New) The apparatus of claim 87, wherein the pressure transmission catheter has a length in the range from approximately one centimeter to approximately four centimeters.

104. (New) The apparatus of claim 87, wherein the pressure transmission catheter has a length of approximately one and a half centimeters.

105. (New) The apparatus of claim 57, wherein the at least one additional layer of material comprises a polymeric material.

106. (New) The apparatus of claim 105, wherein the first layer material comprises a first polymeric material, and the at least one additional layer of material comprises a second polymeric material.

107. (New) The apparatus of claim 106, wherein the first layer material comprises a radiopaque material.

108. (New) The apparatus of claim 64, wherein the at least one additional layer of material comprises a polymeric material.

109. (New) The apparatus of claim 108, wherein the first layer material comprises a first polymeric material, and the at least one additional layer of material comprises a second polymeric material.

110. (New) The apparatus of claim 109, wherein the first layer material comprises a radiopaque material.

111. (New) The apparatus of claim 69, wherein the at least one additional layer of material comprises a polymeric material.

112. (New) The apparatus of claim 111, wherein the first layer material comprises a first polymeric material, and the at least one additional layer of material comprises a second polymeric material.

113. (New) The apparatus of claim 112, wherein the first layer material comprises a radiopaque material.



114. (New) The apparatus of claim 81, wherein the at least one additional layer of material comprises a polymeric material.

115. (New) The apparatus of claim 114, wherein the first layer material comprises a first polymeric material, and the at least one additional layer of material comprises a second polymeric material.

116. (New) The apparatus of claim 115, wherein the first layer material comprises a radiopaque material.